

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Reissue Patent Application:

Applicant : Loi Nguyen and Ravishankar Sundaresan  
Assignee : STMicroelectronics, Inc.  
Filed :  
Title : SRAM CELL FABRICATION WITH INTERLEVEL  
DIELECTRIC PLANARIZATION  
Docket No. : 1678-20

Corresponding Issued U.S. Patent:

Patent No. : 5,710,461  
Issued : January 20, 1998  
Appln. No. : 08/781,429  
Filed : January 10, 1997  
Examiner : A. Williams  
Art Unit : 2508

BOX PATENT APPLICATIONS  
Assistant Commissioner for Patents  
Washington, DC 20231

OFFER TO SURRENDER THE ORIGINAL PATENT

Sir:

STMicroelectronics, Inc., owner by assignment of the entire interest in U.S. Letters Patent No. 5,710,461 which is entitled SRAM CELL FABRICATION WITH INTERLEVEL DIELECTRIC PLANARIZATION and issued on January 20, 1998 to STMicroelectronics, Inc., hereby offers to surrender said Letters Patent.

STMicroelectronics, Inc.

\_\_\_\_\_  
Date

By: \_\_\_\_\_  
Archie McK. Malone  
Executive Vice President  
Finance & C.F.O. and Treasurer

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Original Patent

Patentee:     Loi Nguyen  
               Ravishankar Sundaresan

Patent No.:   5,710,461

Title:         SRAM CELL FABRICATION  
               WITH INTERLEVEL  
               DIELECTRIC PLANARIZATION

Issued:       January 20, 1998

Docket No.:   93-C-078C1

Reissue Application

Applicants:   Loi Nguyen  
               Ravishankar Sundaresan

Application No.:  
               Title: SRAM CELL  
               FABRICATION WITH  
               INTERLEVEL DIELECTRIC  
               PLANARIZATION

Filing Date:   January 20, 2000

Docket No.:   93-C-078C1-RE (1678-20)

**REISSUE APPLICATION DECLARATION BY THE INVENTORS**

As below-named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below.

We believe that we are the original, first and joint inventors of the innovative subject matter described and claimed in the application for reissue of U.S. Patent No. 5,710,461 ('461 patent), which is entitled "SRAM CELL FABRICATION WITH INTERLEVEL DIELECTRIC PLANARIZATION," the specification of which is attached hereto.

We hereby state that we have reviewed and understand the contents of the above-identified U.S. reissue patent application, including both the original claims and the new claims presented in the enclosed First Preliminary Amendment.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulation, § 1.56(a).

We believe the above-identified original '461 patent to be partly inoperative, by reason of the patentees claiming less than we had a right to claim. This error arose without any deceptive intention on our part.

Accordingly, the enclosed First Preliminary Amendment presents amended independent claims and additional dependent claims. These claims have been amended and drafted to more particularly point out and distinctly claim various aspects of our invention. We believe that our invention is at least as broad as these claims.

At least one error upon which reissue is based is described as follows. Issued claims 1 and 7 recite "a third patterned thin-film layer comprising substantially undoped polysilicon having a very high resistivity," and issued claim 12 recites "an additional patterned thin-film layer comprising substantially intrinsic polysilicon." Each of these thin film layers corresponds to layer in which resistors for a static random access memory (SRAM) cell are formed. Regarding these resistors, the specification expressly states in column 4, lines 46-51, that "[a]lthough the resistors are formed from intrinsic polysilicon in the presently preferred embodiment, it will be recognized that a slight amount of doping may be desirable to stabilize the characteristics of this material. For example, this material may be doped with chlorine, or may be SIPOS (containing a large fraction of oxygen)." Thus, the "substantially undoped" language unduly limits the scope of issued claims 1 and 7, and the same is true of the "substantially intrinsic" language in original claim 12.

As named inventors, we hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: LISA K. JORGENSEN, Reg. No. 34,845; THEODORE E. GALANTHAY, Reg. No. 24,122; ROBERT D. MCCUTCHEON, Reg. No. 38,717; JEFF MOY, Reg. No. 39,307; and the attorneys associated with customer no. 000996 as follows: BRYAN A. SANTARELLI, Reg. No. 37,560; JEFFREY T. HALEY, Reg. No. 34,834; STEPHEN M. EVANS, Reg. No. 37,128; RICHARD O. GRAY, Reg. No. 26,550; PAUL F. RUSYN, Reg. No. 42,118; and, JOSHUA KING, Reg. No. 35,570.

Correspondence Address: Direct all communications about the application to:

Lisa K. Jorgenson  
STMicroelectronics, Inc.  
1310 Electronics Drive  
Carrollton, Texas 75006-5039  
Phone: (972) 466-6000  
Fax: (972) 466-7044

We do not know and do not believe that the claimed invention was ever known or used in the United States of America before our invention thereof.

We do not know and do not believe that the claimed invention was ever patented or described in any printed publication in any country before our invention thereof.

We do not know and do not believe that the claimed invention was ever patented or described in any printed publication in any country more than one year prior to the filing date of the original U.S. application.

We do not know and do not believe that the claimed invention was ever patented or made the subject of an inventor's certificate issued prior to the date of this application in any country foreign to the United States of America on an application filed by us or our legal representatives or assigns.

We do not know and do not believe that the claimed invention was ever in public use or on sale in the United States of America more than one year prior to the filing date of the original U.S. application.

We hereby declare that all statements made of our knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may also jeopardize the validity of the application or any patent issued thereon.

\_\_\_\_\_  
Inventor: Loi Nguyen

\_\_\_\_\_  
Date

Residence and Mailing Address: 1724 Brighton Drive, Carrollton, Denton, TX 75007

Citizenship: United States

Inventor: Ravishankar Sundaresan

Date

Residence and Mailing Address: \_\_\_\_\_

Citizenship: India

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Original Patent

Patentee: Loi Nguyen  
Ravishankar Sundaresan

Patent No.: 5,710,461

Title: SRAM CELL FABRICATION  
WITH INTERLEVEL  
DIELECTRIC PLANARIZATION

Issued: January 20, 1998

Atty Dk No.: 93-C-078C1



Reissue Application

Applicant: Loi Nguyen  
Ravishankar Sundaresan

Serial No.:

Title: SRAM CELL FABRICATION  
WITH INTERLEVEL  
DIELECTRIC PLANARIZATION

Filing Date: January 20, 2000

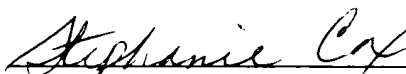
Atty Dk No.: 93-C-078C1-RE (1678-20)

CERTIFICATE OF MAILING OR TRANSMISSION

"Express Mail" mailing label number: EK434158406US

Date of Deposit: January 20, 2000

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR, Section 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231 by

  
Signature

ASSENT OF ASSIGNEE

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

STMicroelectronics, Inc., assignee of U.S. Patent No. 5,710,461, consents to the filing of reissue application No. \_\_\_\_\_ (or the present application, if filed with the initial application papers) for the reissue of U.S. Patent No. 5,710,461.

STMicroelectronics, Inc.

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Archie McK. Malone  
Executive Vice President  
Finance & C.F.O. and Treasurer

<b>REISSUE APPLICATION BY THE ASSIGNEE, OFFER TO SURRENDER PATENT</b>		Docket Number (Optional) <b>93-C-078C1</b>										
<p>This is part of the application for a reissue patent based on the original patent identified below.</p> <p>Name of Patentee(s): <b>Loi Nguyen and Ravishankar Sundaresan</b></p> <table><tr><td>Patent Number</td><td>Date Patent Issued</td></tr><tr><td><b>5,710,461</b></td><td><b>January 20, 1998</b></td></tr></table> <p>Title of Invention <b>SRAM CELL FABRICATION WITH INTERLEVEL DIELECTRIC PLANARIZATION</b></p> <p><u><b>STMicroelectronics, Inc.</b></u> is the assignee of the entire interest in the original patent.</p> <p>I offer to surrender the original patent.</p> <p><input checked="" type="checkbox"/> A certificate under 37 CFR 3.73(b) is attached.</p> <p>I am authorized to act on behalf of the assignee.</p> <p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application, any patent issued thereon, or any patent to which this declaration is directed.</p> <table><tr><td>Name of assignee</td></tr><tr><td><b>STMicroelectronics, Inc.</b></td></tr></table> <table><tr><td>Signature of person signing for assignee</td><td>Date</td></tr><tr><td colspan="2"> </td></tr></table> <p>Typed or printed name and title of person signing for assignee <b>Archie McK. Malone, Executive Vice President, Finance &amp; C.F.O. and Treasurer</b></p> <p> </p>			Patent Number	Date Patent Issued	<b>5,710,461</b>	<b>January 20, 1998</b>	Name of assignee	<b>STMicroelectronics, Inc.</b>	Signature of person signing for assignee	Date		
Patent Number	Date Patent Issued											
<b>5,710,461</b>	<b>January 20, 1998</b>											
Name of assignee												
<b>STMicroelectronics, Inc.</b>												
Signature of person signing for assignee	Date											



**CERTIFICATE UNDER 37 C.F.R. § 3.73(b)**

Applicant: Loi Nguyen and Ravishankar Sundaresan

Reissue Application No.: Filed:

For: SRAM CELL FABRICATION WITH INTERLEVEL DIELECTRIC  
PLANARIZATION

STMicroelectronics, Inc., \_\_\_\_\_ a corporation  
 (Name of Assignee) (Type of Assignee, e.g., corporation,  
 partnership, government agency, etc.)

certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of either:

A. ☒ An assignment from inventors of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel 6828 Frame 0050 (copy enclosed).

B. ☐ A chain of title from the inventor(s), of the patent application identified above, to the current assignees as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_  
 Frame \_\_\_\_\_ or for which a copy thereof is attached.

2. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_  
 Frame \_\_\_\_\_ or for which a copy thereof is attached.

3. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_  
 Frame \_\_\_\_\_ or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ Copies of assignments or other documents in the chain of title are attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: \_\_\_\_\_

Name: Archie McK. MaloneTitle: Executive Vice President, Finance & C.F.O. and Treasurer

Signature: \_\_\_\_\_